



Wednesday, January 16, 2019

Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Project ID: QUARTERLY SLUDGE & SULFIDE
Sample ID#s: CC27851 - CC27852

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Phyllis Shiller".

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 16, 2019

FOR: Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Sample Information

Matrix: SLUDGE
Location Code: BARNHARD
Rush Request: Standard
P.O.#: G10513

Custody Information

Collected by:
Received by: LB
Analyzed by: see "By" below

Date

01/11/19
01/11/19

Time

6:30
15:16

Laboratory Data

SDG ID: GCC27851
Phoenix ID: CC27851

Project ID: QUARTERLY SLUDGE & SULFIDE
Client ID: SLUDGE GRAB

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Boron	49.0	3.1	mg/Kg	1	01/12/19	CPP	SW6010D
Cadmium	< 0.78	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Chromium	8.60	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Copper	13.6	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Mercury	< 0.47	0.47	mg/kg	1	01/14/19	RS	SW7471B
Potassium	4300	1.6	mg/Kg	1	01/12/19	TH	SW6010D
Molybdenum	2.93	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Nickel	3.30	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Lead	< 0.78	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Zinc	21.8	0.78	mg/Kg	1	01/12/19	CPP	SW6010D
Percent Solid	12.3	1	%		01/11/19		SW846-%Solid
Total Solids @ 104C	12.3	0.1	%	1	01/11/19	AP/DA	SM2540B-11
Ammonia as Nitrogen	1910	747	mg/Kg	1	01/12/19	KDB	E350.1
Nitrite as N	10.3	0.81	mg/kg	10	01/11/19	BS/GD	SW9056A
Nitrate as N	29.2	4.07	mg/kg	10	01/11/19	BS/GD	SW9056A
pH - Sludge	8.05	1.00	pH Units	1	01/11/19 18:45	O	SW9045
Nitrogen Tot Kjeldahl	70500	1490	mg/Kg	1	01/12/19	KDB	E351.1
Total Nitrogen	70500	0.05	mg/Kg	1	01/12/19	KDB	SM4500NH3/E300.0-97
Phosphorus, Total	3340	100	mg/Kg	25	01/14/19	MI	SM4500PE-11
Mercury Digestion	Completed				01/14/19	EV/I	SW7471B
Sludge Ext. for PCB	Completed				01/14/19	P/V	SW3550C
Total Metals Digest	Completed				01/11/19	M/AG/BF	SW3050B

Polychlorinated Biphenyls

PCB-1016	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1221	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1232	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1242	ND	390	ug/Kg	1	01/15/19	SC	SW8082A

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
PCB-1248	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1254	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1260	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1262	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
PCB-1268	ND	390	ug/Kg	1	01/15/19	SC	SW8082A
<u>QA/QC Surrogates</u>							
% DCBP	86		%	1	01/15/19	SC	30 - 150 %
% TCMX	72		%	1	01/15/19	SC	30 - 150 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director

January 16, 2019

Reviewed and Released by: Rashmi Makol, Project Manager



Environmental Laboratories, Inc.
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Analysis Report

January 16, 2019

FOR: Attn: Mr. Keith Gammell
Barnhardt Mfg. Co.
247 Main Rd
P.O. Box 3
Colrain, MA 01340

Sample Information

Matrix: WASTE WATER
Location Code: BARNHARD
Rush Request: Standard
P.O.#: G10513

Custody Information

Collected by:
Received by: LB
Analyzed by: see "By" below

Date

01/11/19
01/11/19

Time

7:00
15:16

Laboratory Data

SDG ID: GCC27851
Phoenix ID: CC27852

Project ID: QUARTERLY SLUDGE & SULFIDE
Client ID: EFFLUENT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Sulfide	< 0.05	0.05	mg/L	1	01/15/19	GD	SM4500S-D-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

January 16, 2019

Reviewed and Released by: Rashmi Makol, Project Manager



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QA/QC Report

January 16, 2019

QA/QC Data

SDG I.D.: GCC27851

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463161 (mg/kg), QC Sample No: CC27616 (CC27851)													
Mercury - Soil	BRL	0.02	0.07	0.10	NC	90.1	99.0	9.4	120			75 - 125	20
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%													
QA/QC Batch 463084 (mg/kg), QC Sample No: CC27733 (CC27851)													
<u>ICP Metals - Soil</u>													
Boron	BRL	1.3	1.6	1.6	NC	103			96.0			75 - 125	30
Cadmium	BRL	0.33	<0.33	<0.37	NC	102			95.7			75 - 125	30
Chromium	BRL	0.33	12.5	12.9	3.10	106			98.3			75 - 125	30
Copper	BRL	0.67	23.1	22.2	4.00	107			97.0			75 - 125	30
Lead	BRL	0.33	31.3	35.3	12.0	103			96.1			75 - 125	30
Molybdenum	BRL	0.33	<0.33	<0.37	NC	108			98.4			75 - 125	30
Nickel	BRL	0.33	11.2	10.9	2.70	102			97.7			75 - 125	30
Potassium	BRL	5.0	1690	1700	0.60	115			>130			75 - 125	30 m
Zinc	BRL	0.67	49.8	52.1	4.50	103			103			75 - 125	30

m = This parameter is outside laboratory MS/MSD specified recovery limits.



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QA/QC Report

January 16, 2019

QA/QC Data

SDG I.D.: GCC27851

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463342 (mg/L), QC Sample No: CC26990 (CC27852)													
Sulfide	BRL	0.05	<0.05	<0.05	NC	100			79.6			90 - 110	20
QA/QC Batch 463102 (%), QC Sample No: CC27549 (CC27851)													
Total Solids	BRL	0.1	22.4	25.8	14.1	100						75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463114 (PH), QC Sample No: CC27732 (CC27851)													
pH at 25C - Soil			9.06	9.02	0.40	99.9						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463253 (mg/Kg), QC Sample No: CC27815 (CC27851)													
Phosphorus, Total as P	BRL	0.50	25400	28300	10.8	97.4						75 - 125	30
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463285 (mg/L), QC Sample No: CC27807 (CC27851)													
Nitrate as Nitrogen	BRL	0.05	2.38	2.39	0.40	101			88.6			90 - 110	20 m
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	108			97.4			90 - 110	20
QA/QC Batch 463075 (mg/Kg), QC Sample No: CC25466 17.5X (CC27851)													
Ammonia as Nitrogen	BRL	3.51	7610	8230	7.80	101			82.5			75 - 125	30
Nitrogen Tot Kjeldahl	BRL	3.51	58900	57030	3.20	98.4			122			75 - 125	30
Comment:													
TKN is reported as Organic Nitrogen in the Blank, LCS, DUP and MS.													

m = This parameter is outside laboratory MS/MSD specified recovery limits.



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QA/QC Report

January 16, 2019


QA/QC Data

SDG I.D.: GCC27851

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463309 (ug/Kg), QC Sample No: CC25857 (CC27851)										
<u>Polychlorinated Biphenyls - Sludge</u>										
PCB-1016	ND	13	70	68	2.9				40 - 140	30
PCB-1221	ND	13							40 - 140	30
PCB-1232	ND	13							40 - 140	30
PCB-1242	ND	13							40 - 140	30
PCB-1248	ND	13							40 - 140	30
PCB-1254	ND	13							40 - 140	30
PCB-1260	ND	13	82	80	2.5				40 - 140	30
PCB-1262	ND	13							40 - 140	30
PCB-1268	ND	13							40 - 140	30
% DCBP (Surrogate Rec)	78	%	82	87	5.9				30 - 150	30
% TCMX (Surrogate Rec)	65	%	74	73	1.4				30 - 150	30

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference


Phyllis Shiller, Laboratory Director
January 16, 2019

Wednesday, January 16, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCC27851 - BARNHARD

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
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*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



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Analysis Comments

January 16, 2019

SDG I.D.: GCC27851

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

